

Configuring the system monitor

The NT8D22 System Monitor is used in options 21, 21E, 51, 51C, 61, 61C, 71, 81, and 81C. The NT7D15 System Monitor is used in only option 21A.

Configuring the NT8D22 System Monitor

The master NT8D22 System Monitor interfaces with a Serial Data Interface (SDI) port in the column with CPU 0.

- 1 Set the baud rate for the SDI port associated with the system monitor to 1200 baud in DTE mode.
- 2 In the rear of the pedestal, loosen the two retaining screws on the system monitor and remove it from the PDU.
- 3 Set the option switches for each system monitor. (See *Circuit card installation and testing* (553-3001-211) for a detailed description of switch setting options.)

For a single-column system, set the switches as shown in [Table 5](#).

Note: Connect and cable the system monitor in a single-column system like a master system monitor for the rest of this procedure.

Table 5
NT8D22 switch settings for a single-column system

Switch	1	2	3	4	5	6	7	8
SW1	off	off	*	on**	off	off	off	off
SW2	on	off	on	on	on	on	on	on
SW3	on	on	on	on				
* Set to on for a DC-powered system; set to off for an AC-powered system.								
** Set to off if the system is not equipped with a PFTU.								

For a multiple-column system, set the system monitor in the column with CPU 0 as the master, using the settings shown in [Tables 6](#) and [8](#).

Set option switches on slave system monitors as shown in [Tables 7](#) and [9](#). If CPU 0 and CPU 1 are in different columns, set the system monitor in the column with CPU 1 as slave unit 1. Number the slaves sequentially wherever possible.

Table 6
Switch settings for *master* in multiple-column system

Switch	1	2	3	4	5	6	7	8
SW1	off	off	*	on**	off	off	off	off
SW2	on	off	To set positions 3–8, see Table 8					
SW3	on	on	on	on				
* Set to on for a DC-powered system; set to off for an AC-powered system. ** Set to off if the system is not equipped with a PFTU.								

Table 7
Switch settings for *slaves* in multiple-column system

Switch	1	2	3	4	5	6	7	8
SW1	off	off	*	**	off	off	off	off
SW2	off	off	To set positions 3–8, see Table 9					
SW3	off	off	off	off				
* Set to on for a DC-powered system; set to off for an AC-powered system. ** Set to on to enable PFTU (if equipped) during over-temperature condition. Set to off to disable PFTU during over-temperature condition.								

Table 8
SW2 on *master*—total number of slaves in the system

How many slave units	Switch position						How many slave units	Switch position					
	3	4	5	6	7	8		3	4	5	6	7	8
0	on	on	on	on	on	on	32	off	on	on	on	on	on
1	on	on	on	on	on	off	33	off	on	on	on	on	off
2	on	on	on	on	off	on	34	off	on	on	on	off	on
3	on	on	on	on	off	off	35	off	on	on	on	off	off
4	on	on	on	off	on	on	36	off	on	on	off	on	on
5	on	on	on	off	on	off	37	off	on	on	off	on	off
6	on	on	on	off	off	on	38	off	on	on	off	off	on
7	on	on	on	off	off	off	39	off	on	on	off	off	off
8	on	on	off	on	on	on	40	off	on	off	on	on	on
9	on	on	off	on	on	off	41	off	on	off	on	on	off
10	on	on	off	on	off	on	42	off	on	off	on	off	on
11	on	on	off	on	off	off	43	off	on	off	on	off	off
12	on	on	off	off	on	on	44	off	on	off	off	on	on
13	on	on	off	off	on	off	45	off	on	off	off	on	off
14	on	on	off	off	off	on	46	off	on	off	off	off	on
15	on	on	off	off	off	off	47	off	on	off	off	off	off
16	on	off	on	on	on	on	48	off	off	on	on	on	on
17	on	off	on	on	on	off	49	off	off	on	on	on	off
18	on	off	on	on	off	on	50	off	off	on	on	off	on
19	on	off	on	on	off	off	51	off	off	on	on	off	off
20	on	off	on	off	on	on	52	off	off	on	off	on	on
21	on	off	on	off	on	off	53	off	off	on	off	on	off
22	on	off	on	off	off	on	54	off	off	on	off	off	on
23	on	off	on	off	off	off	55	off	off	on	off	off	off
24	on	off	off	on	on	on	56	off	off	off	on	on	on
25	on	off	off	on	on	off	57	off	off	off	on	on	off
26	on	off	off	on	off	on	58	off	off	off	on	off	on
27	on	off	off	on	off	off	59	off	off	off	on	off	off
28	on	off	off	off	on	on	60	off	off	off	off	on	on
29	on	off	off	off	on	off	61	off	off	off	off	on	off
30	on	off	off	off	off	on	62	off	off	off	off	off	on
31	on	off	off	off	off	off	63	off	off	off	off	off	off

Table 9
SW2 on each *slave*—unit number for the slave

Slave unit address	Switch position						Slave unit address	Switch position					
	3	4	5	6	7	8		3	4	5	6	7	8
1	on	on	on	on	on	off	33	off	on	on	on	on	off
2	on	on	on	on	off	on	34	off	on	on	on	off	on
3	on	on	on	on	off	off	35	off	on	on	on	off	off
4	on	on	on	off	on	on	36	off	on	on	off	on	on
5	on	on	on	off	on	off	37	off	on	on	off	on	off
6	on	on	on	off	off	on	38	off	on	on	off	off	on
7	on	on	on	off	off	off	39	off	on	on	off	off	off
8	on	on	off	on	on	on	40	off	on	off	on	on	on
9	on	on	off	on	on	off	41	off	on	off	on	on	off
10	on	on	off	on	off	on	42	off	on	off	on	off	on
11	on	on	off	on	off	off	43	off	on	off	on	off	off
12	on	on	off	off	on	on	44	off	on	off	off	on	on
13	on	on	off	off	on	off	45	off	on	off	off	on	off
14	on	on	off	off	off	on	46	off	on	off	off	off	on
15	on	on	off	off	off	off	47	off	on	off	off	off	off
16	on	off	on	on	on	on	48	off	off	on	on	on	on
17	on	off	on	on	on	off	49	off	off	on	on	on	off
18	on	off	on	on	off	on	50	off	off	on	on	off	on
19	on	off	on	on	off	off	51	off	off	on	on	off	off
20	on	off	on	off	on	on	52	off	off	on	off	on	on
21	on	off	on	off	on	off	53	off	off	on	off	on	off
22	on	off	on	off	off	on	54	off	off	on	off	off	on
23	on	off	on	off	off	off	55	off	off	on	off	off	off
24	on	off	off	on	on	on	56	off	off	off	on	on	on
25	on	off	off	on	on	off	57	off	off	off	on	on	off
26	on	off	off	on	off	on	58	off	off	off	on	off	on
27	on	off	off	on	off	off	59	off	off	off	on	off	off
28	on	off	off	off	on	on	60	off	off	off	off	on	on
29	on	off	off	off	on	off	61	off	off	off	off	on	off
30	on	off	off	off	off	on	62	off	off	off	off	off	on
31	on	off	off	off	off	off	63	off	off	off	off	off	off
32	off	on	on	on	on	on	58	off	off	off	on	off	on

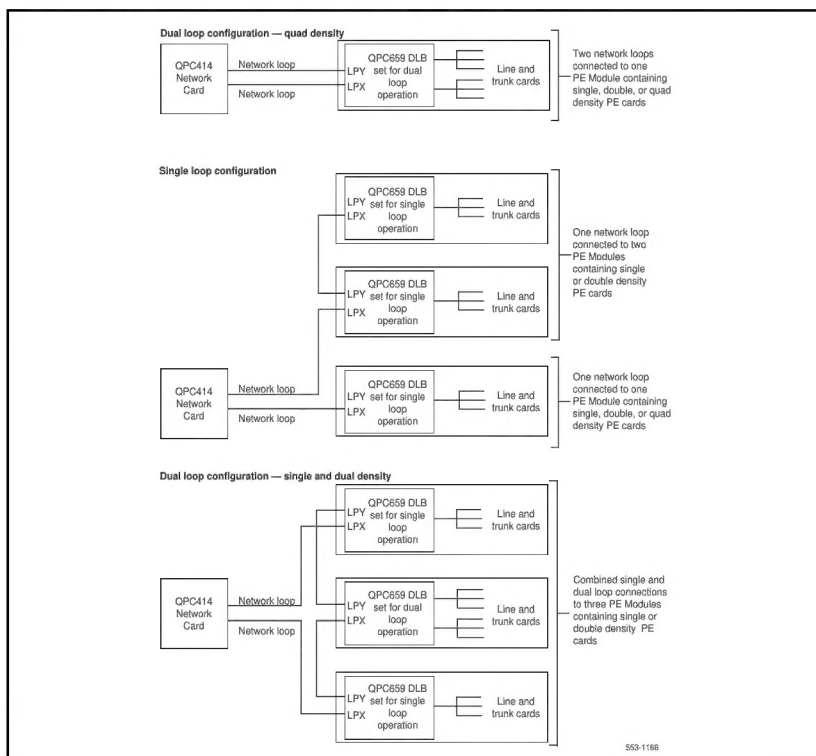
Cabling the NT8D22 System Monitor

- 1 Remove the I/O safety panel in the rear of the module with CPU 0.
- 2 Connect the master system monitor to the SDI port.

For options 21, 21E, 51, 51C, 61, and 61C, connect the narrow ribbon on one of the cables listed below from connector J2 on the backplane to the assigned port on the SDI card (see [Figure 49](#)).

- To connect an NT8D41 SDI Paddle Board, use an NT8D46AG cable, or, if an NT7D67CB PDU is equipped, an NT8D46CC cable.
- To any other type of SDI card, use an NT8D46AD cable.

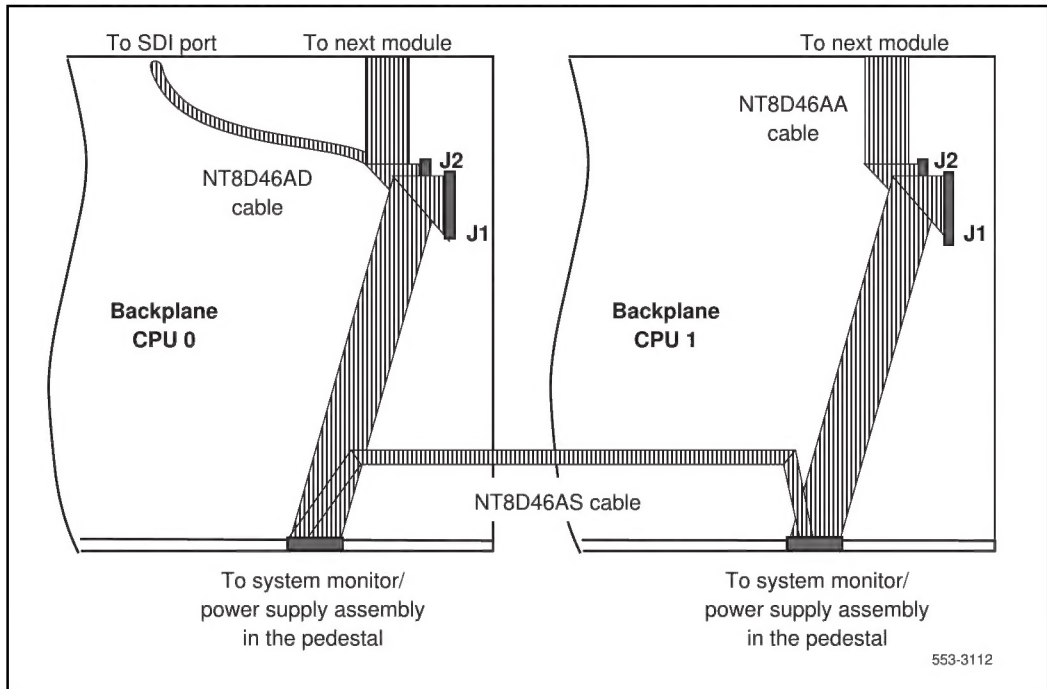
Figure 49
Options 21, 21E, 51, 51C, 61 and 61C—
cable master system monitor to SDI port



For options 71, 81, and 81C

- Connect the master system monitor to slave unit 1 with an NT8D46AS cable.
- Connect the narrow ribbon on an NT8D46AD cable from connector J2 in the module with CPU 0 to the assigned port on the SDI card (see [Figure 50](#)).

Figure 50
Options 71, 81, and 81C—cabling for master system monitor to slave unit 1 and SDI port



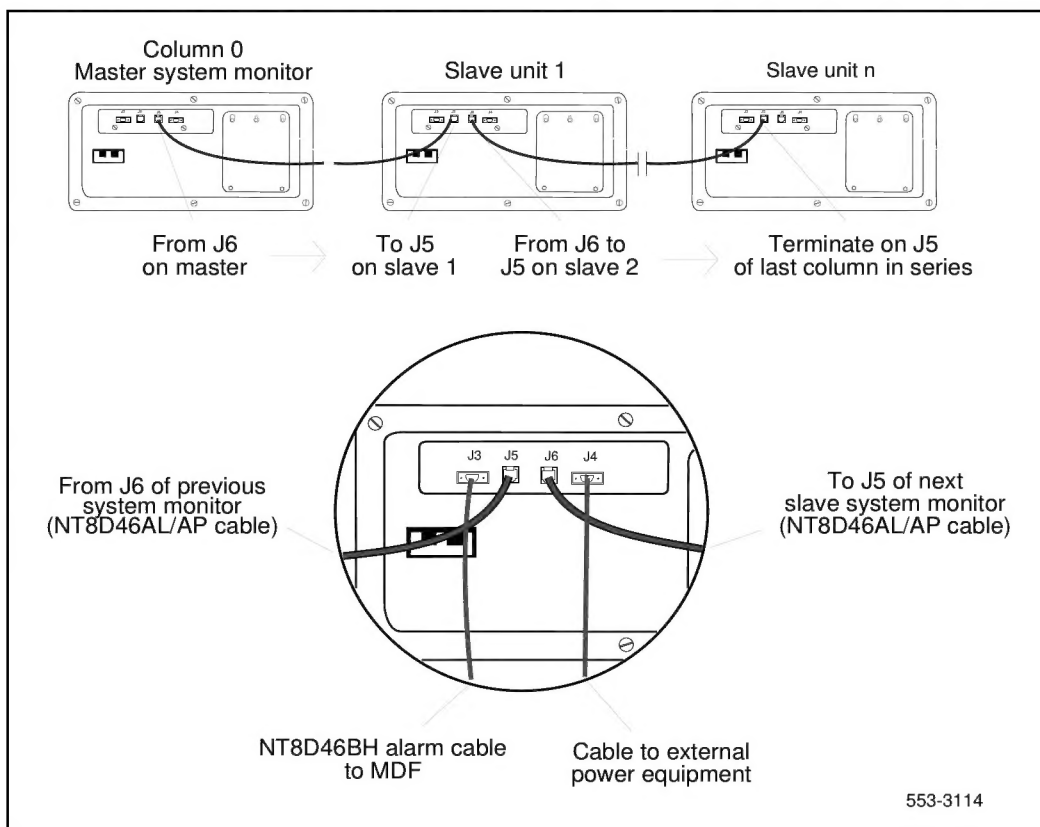
3 Daisy-chain slave system monitors to the master.

For a single-column system, skip this step.

For a multiple-column system, beginning with the master system monitor, cable in series (slave 1 to slave 2, slave 2 to slave 3, and so on) from connector J6 to connector J5 on each system monitor (see [Figure 51](#)). Terminate at connector J5 on the last column.

- If columns are adjacent, use an NT8D46AL cable.
- If columns are not adjacent, use an NT8D46AP cable.

Figure 51
Multiple-column system monitor connections



- 4 For PFTU or external alarm cabling, connect a system monitor to MDF cable:

- Connect a system monitor to MDF cable to connector J3 on the master system monitor.
- Connect the cable at the Meridian 1 alarm termination area at the MDF. See [Table 10](#) for the terminating sequence.

Note 1: The system monitor to MDF cable is available in three lengths: NT8D46BH (32 ft), NT8D46EH (100 ft), and NT8D46DH (150 ft).

Note 2: If additional contact closures are required through the J3 REMALMA or REMALMB leads (for a hard alarm in case a column loses power, for example), additional system monitor to MDF cables can be ordered.

Table 10
NT8D22 System Monitor— pin assignments at J3

Pin	Direction	Color	Signal name	Description
1	out	BL/W	REMALMA	Remote major alarm (connect for external alarm)
2	out	OR/W	REMALMB	Remote major alarm return (connect for external alarm)
3	out	GR/W	CE-SYSLT	CE system line transfer (upgraded systems only)
4	—	BR/W	MDF0/GND	MDF return (ground)
5	in	SL/W	CEALMIN	CE alarm (upgraded systems only)
6	—	BL/R	SYSLTIN	System line transfer in (upgraded systems only)
7	out	W/BL	LFBEN	Line forced bypass enable (connect for PFTU operation)
8	out	W/OR	LFBENR	Line forced bypass enable return (connect for PFTU operation)
9	—	W/GR	GND	Ground
Note: Pins 6, 8, and 9 should be connected and grounded at the MDF.				

5 For AC-powered systems with a UPS:

- Connect the appropriate cable (see the following list) from connector J4 on the system monitor in the column with CPU 0 (the master system monitor) to the associated UPS. [Table 11](#) gives the pin assignments and signal descriptions for the alarm cables.

For a Best Inc. UPS, use an NT8D46AJ alarm cable.

For an Exide UPS, use an NT8D46AQ alarm cable.

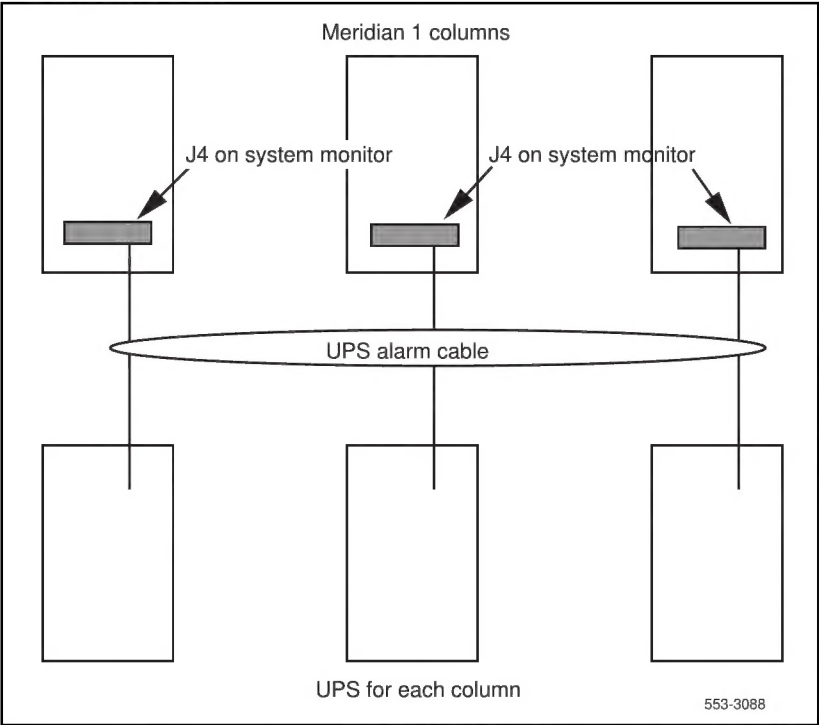
For an Alpha UPS, use an NT8D46AU alarm cable.

- Connect the cable to the UPS as specified by the manufacturer.
- Repeat this step for each system monitor with an associated UPS (see [Figure 52](#)).

Table 11
NT8D22 System Monitor— pin assignments at J4

Pin	Signal description
1	Not used
2	Not used
3	Not used
4	Not used
5	Alarm 1 (AC fail; to UPS)
6	Alarm 1 return
7	Alarm 2 (Power sense; from UPS)
8	Alarm 2 return
9	Not used

Figure 52
UPS alarm cabling



- 6** For DC-powered systems, extend the alarm and trip leads from connector J4 on the system monitor in the column with CPU 0 (the master system monitor) to the external power equipment using an NT8D46AV cable ([Table 12](#)).

Note 1: Conduit is not required.

Note 2: An NT8D46BV cable, 20 m (64 ft), or NT8D46CV cable, 33 m (100 ft), can be used instead of the NT8D46AV cable. Connections are the same as the NT8D46AV cable.

Table 12
Alarm and trip lead connections—NT8D46AV cable

Color	Description	Connection at control and distribution panel	
		Terminal block No	Pwr Sys Alarm Name
OR	Alarm	TB2 Position 6	Low Float
BL	DCON 0	TB4 Position 8	Rectifier Fail Alarm
R	DCON 1*	TB5 Position 2	Major Alarm
W	DCON 2*	TB5 Position 2	Major Alarm
GR	DCON 3*	TB5 Position 2	Major Alarm
* Connect the red, white, and green wires together at MJA.			

The System 600/48 Power Plant produces a Major Alarm for the following faults:

- High voltage shut down (HVSD)
- High voltage (HV)
- Battery on discharge (BOD)
- Low voltage (LV)
- Low voltage disconnect (LVD)
- Alarm busy supply (ABSF)
- Internal fuse alarm (INT FA)
- Fuse alarm (FA)
- Rectifier fail alarm (RFA)

Installing the NT7D15 System Monitor

In option 21A, the NT7D15 System Monitor can be installed in any of the four slots on the rear of the backplane in the NT8D11 CE/PE Module. Note that there are no system terminal or SDI port connections to the NT7D15.

CAUTION

Cables must be *disconnected* when the system monitor is installed. When you connect the cables, follow the order given in this procedure or the system will shut down.

- 1 Remove the I/O safety panel in the rear of the CE/PE Module. Insert the system monitor into one of the slots on the rear of the backplane *before* you connect any cables to the system monitor.
- 2 Connect an NT8D40BJ cable from P1 on the system monitor to connector J1 on the backplane.

- 3 Connect an NT8D84BA cable from P2 on the system monitor to an available connector on the interior of the I/O panel; connect a system monitor to MDF cable from the external side of the I/O connector to the MDF (see [Table 13](#)).

Note: The system monitor to MDF cable is available in three lengths: NT8D46BH (32 ft), NT8D46EH (100 ft), and NT8D46DH (150 ft).

- 4 Connect an NT8D40BK cable from P3 on the system monitor to connectors C1 and C2 on the circuit breaker assembly in the pedestal.

Table 13
NT7D15 System Monitor—system monitor to MDF cable pin assignments at the MDF

Pin	Direction	Signal name	Description
1	out	REMAIMA	Remote major alarm (connect for external alarm)
2	—	NC	Do not connect
3	—	NC	Do not connect
4	out	LFBEN	Line forced bypass enable (connect for PFTU operation)
5	—	GND	Ground
6	out	REMAIMB	Remote major alarm return (connect for external alarm)
7	—	NC	Do not connect
8	—	GND	Ground
9	out	LFBENR	Line forced bypass enable return (connect for PFTU)
Note: Pins 5, 8, and 9 should be connected and grounded at the MDF.			